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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/629,584 | 07/30/2003 | Junichi Ikeda | 2003_1058A | 6195 |

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| EXAMINER |
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HOGAN, JAMES SEAN

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| ART UNIT | PAPER NUMBER |
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3752

DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 10/629,584 | Applicant(s) IKEDA, JUNICHI | |
| | Examiner James S Hogan | Art Unit 3752 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07/30/2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8, 10-12, and 15 is/are rejected.
- 7) ☒ Claim(s) 6, 7, 9, 13 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>07/30/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the rectangular cross-sections (claim 1) and the circular cross-sections (claim 10) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. Claim 5 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, ratios of dimensions are associated with axes, which, by definition, are endless lines that cannot have a dimension.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, and 8 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,796,772 to Ikeda et al.

Regarding claims 1-3, Ikeda et al. teach an ejector having a nozzle that has inlet and outlet ends, a diffuser also with inlet and outlet ends, both having a rectangular cross-section. The narrowest portion of the fluid passage between the outlet end of the nozzle and the inlet end of the diffuser defines a throat. As for claim 4, the rectangular cross section associated with the overall of the nozzle and diffuser is also associated with the cross section of the throat. As for claim 8, Ikeda et al. ('772) teaches an inlet end of the diffuser having an area adjacent to the inlet of the diffuser, because of

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parallel sidewalls, the cross-section would be constant. Further, the opposing sidewalls of the fluid passage of the diffuser have diverging portions, which define a "small divergence angle" (Col. 6, line 21-22). As for claim 2, the figures 7a and 7b of Ikeda et al. ('772) indicate diverging walls that are symmetrical when compared against a centerline. It would have been obvious to one skilled in the art at the time the invention was made to have defined the divergence angles, being small, to a concrete optimal performance of a range of 5-10°, and, based on scientific testing to confirm, to a finite 7.5°.

Claims 10-12, and 15 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,796,772 to Ikeda et al.

Regarding claims 10-12, Ikeda et al. teach an ejector having a nozzle that has inlet and outlet ends, a diffuser also with inlet and outlet ends, both having a circular cross-section. The narrowest portion of the fluid passage between the outlet end of the nozzle and the inlet end of the diffuser defines a throat. As for claim 15, Ikeda et al. ('772) teaches an inlet end of the diffuser having an area adjacent to the inlet of the diffuser, because of parallel sidewalls, the cross-section is constant. The opposing sidewalls of the fluid passage of the diffuser have diverging portions, which define a "small divergence angle" (Col. 6, line 21-22) As for claim 11, the figures 7a and 7b of Ikeda et al. ('772) indicate diverging walls that are symmetrical when compared against a centerline. It would have been obvious to one skilled in the art at the time the invention was made to have defined the divergence angles, being small, to a concrete

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optimal performance of a range of 3.5-6.5°, and, based on scientific testing to confirm, to a finite 5.0°.

Allowable Subject Matter

4. Claims 6,7,9,13 and 14 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure is as follows

U.S. Patent No. 6,625,981 to Ikeda et al., disclosing the invention

U.S. Patent No. 3,754,841 to Grapp et al., disclosing the invention

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S Hogan whose telephone number is (571) 272-4902. The examiner can normally be reached on Mon-Fri, 7:00a-4:00p EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Scherbel can be reached on (571) 272-4919. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JSH
03/02/2005



David A. Scherbel
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Group 3700